

THAT WHICH IS CLAIMED:

1. A substantially purified protein having anti-thrombin activity,
wherein said protein is isolated from the salivary glands of a species of the order
Nematocera.

2. The protein of claim 1 wherein said protein comprises the amino acid
sequence given in SEQ ID NO: 2.

3. The protein of claim ¹~~2~~, wherein said protein is isolated from the
salivary glands of a species of *simulium*.

4. The protein of claim 3, wherein said species is selected from the
group consisting of *S. vittatum*, *S. metallicum*, *S. bivittatum*, *S. argus*, and *S.*
ochraceum.

5. The protein of claim 4, wherein said species is *S. vittatum*.

~~2/6~~ 6. The protein of claim 1, wherein said protein is produced by
recombinant methods.

7. An isolated nucleotide sequence which encodes a protein having anti-
thrombin activity, wherein said protein is isolated from the salivary glands of a
species of the order Nematocera.

8. The nucleotide sequence of claim 7, wherein said protein comprises
the amino acid sequence set forth in SEQ ID NO: 2.

9. The nucleotide sequence of claim 8, wherein said sequence comprises
the DNA sequence set forth in SEQ ID NO: 1.

1 10. A nucleotide sequence that hybridizes to the sequence of claim 8
2 under stringent conditions.

1 11. A vector comprising the nucleotide sequence of claim 8.

1 12. A host cell comprising the vector of claim 11.

1 13. A vector comprising the nucleotide sequence of claim 9.

1 14. A host cell comprising the vector of claim 13.

1 15. A method for producing a protein having anti-thrombin activity, said
2 method comprising:

3 culturing a procaryotic or eucaryotic cell that is transformed with a
4 nucleotide sequence encoding the protein of claim 2 under conditions such that said
5 protein is produced; and,
6 isolating said protein.

1 16. A method for treating venous thrombosis in a mammal, said method
2 comprising administering a therapeutically effective amount of an anti-thrombin
3 protein, wherein said protein comprises the amino acid sequence set forth in SEQ ID
4 NO: 2 to said mammal.

1 17. The method of claim 16, wherein said protein is produced by
2 recombinant methods.

0503613.030699

Reda